



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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April 22, 1997

TO: Board of Oil, Gas and Mining *MAW*  
THRU: Mary Ann Wright, Associate Director *MAW*  
THRU: D. Wayne Hedberg, Permit Supervisor *DWH*  
FROM: Tom Munson, Senior Reclamation Specialist *T. Munson*  
RE: Updated Information, Centurion Mines Corporation, OK Mine, M/001/039, Beaver County, Utah

It has come to our attention that the legal description as found in the Reclamation Contract and the executive summary are not the same. We contacted Centurion Mines Corporation in order to clarify this discrepancy and obtain the corrected legal description. We asked Centurion Mines to address the legal description for each phase of their mining operation.

Enclosed you will find: 1) an updated executive summary; 2) updated page 8 of the Reclamation Contract which shows the legal description for each phase of the project; and 3) a map showing the three phases of their operation.

As stated in our previous memo, Centurion Mines only wishes to post reclamation surety for Phase I of their project at this time, although the Division has approved of the mining and reclamation permit for the entire project. At such time as Phase II and Phase III are initiated, Centurion Mines will again have to come before the Board to seek approval of the form and amount of additional surety.

jb

Enclosure: Updated Executive Summary, page 8 of the MR-RC, Map  
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## EXECUTIVE SUMMARY

Prepared January 8, 1997  
Updated April 22, 1997

Mine Name: OK Mine  
Operator: Centurion Mines Corporation  
331 South Rio Grande Street - Suite 201  
Salt Lake City, Utah 84110  
Telephone: (801) 534-1120  
Contact Person: Rick Havenstrite

I.D. No.: M/001/039  
County: Beaver  
New/Existing: New  
Mineral Ownership: Fee  
Surface Ownership: Fee  
Lease No.(s): N/A  
Permit Term: Life of Mine

Life of Mine: 10 years +

**Legal Description:** Phase I: NE1/4 and SE1/4 of the NW1/4; the NW1/4 and SW1/4 of the NE1/4 of Section 7; the SE1/4 and the NE1/4 of the SW1/4; the NW1/4 and the SW1/4 of the SE1/4 of Section 6, T27S, R11W, SLB&M, Beaver County, Utah

Phase II: NW1/4 and SW1/4 of the SE1/4 of Section 6; the NW1/4 of the NE1/4 of Section 7, T27S, R11W, SLB&M, Beaver County, Utah

Phase III: NE1/4 and SE1/4 of the SE1/4 of Section 6; the NW1/4 and SW1/4 of the SW1/4; the SE1/4 of the SW1/4 of Section 5; the NW1/4 of the NW1/4 of Section 8; the NW1/4 and NE1/4 of the NE1/4 of Section 7, T27S, R11W, SLB&M, Beaver County, Utah

**Mineral(s) to be Mined:** Copper produced from the following oxide copper minerals - azurite, malachite and tenorite

**Acres to be Disturbed:** 275 acres for Phases I, II & III, (Phase I = 128 acres)

**Present Land Use:** Hunting, grazing, rock collecting, off-road vehicles

**Postmining Land Use:** Grazing and recreation

**Variances from Reclamation Standards (Rule R647) Granted:** R647-4-111-7-highwalls; 111.9 - dams and impoundments; 111-12-topsoil redistribution (pit walls); and 111-13- Revegetation (pit walls).

(1) pit highwalls will be allowed to remain at angles steeper than 45 degrees. Backfilling or otherwise flattening the pit walls at the end of mining would have the effect of making the remaining ore uneconomic for future mining. The current pit walls are stable at approximately 60 degrees and have been for 25 years.

2) dams & impoundments: A small impoundment of less than several hundred square feet will be left based on the following facts. It will have a reduced drainage area following reclamation. The embankment will be stabilized with coarse rock to prevent failure. It will also provide some riparian habitat and limited water for wildlife following reclamation. It is not considered large enough to constitute a hazard and will remain an overall benefit to an arid environment.

3) topsoil redistribution and revegetation: It is not practical to regrade or revegetate pit walls. The pit walls will be left at approximately 55 degrees. The walls will be solid rock. Based on the condition of the current pit, it is highly unlikely that vegetation can be established on these walls.



### Soils and Geology

**Soil Description:** Soils are all derived from decomposed granite with varied amounts of silt, sand and rocks. Soil depths in the mine and dump areas are typically less than 5 feet and are underlain by bedrock. In the area of the pad, soils contain a higher degree of silt and sand and the depth to bedrock is 5 to 20 feet typically.

**pH:** 8.1 - 8.3

**Special Handling Problems:** None

**Geology Description:** The project is located in low foothills and the top of a gently southernly sloping alluvial fan. The entire area is underlain by a massive igneous (granite) intrusion. A nearly vertical fault zone cut the granitic formation and this fault was later mineralized with copper minerals such as azurite, malachite, and tenorite. The relatively homogenous granitic rock formation extends at least 3 miles in every direction.

### Hydrology

**Ground Water Description:** There have been hundreds of holes drilled in the vicinity of the project. The holes drilled in the vicinity of the pit, 400 feet below the bottom of the pit, were dry. Other holes drilled within the vicinity of the project encountered minor amounts of brackish water. Only several holes encountered any significant water and these holes were located next to one of the two main drainages coming from the hills above the project. Hole MD-1 was drilled in the vicinity of the pad to a depth of 705 feet and encountered negligible water. Hole MW-1, southwest side of the pad, encountered good water and is down gradient of the pad and is to remain a monitoring well.

**Surface Water Description:** There are no streams or springs within 5 miles of the operation. A major wash exists to the west of the project which collects surface runoff from a large area to the west and north of the project. This wash is ephemeral and will not be disturbed. It and only experiences flows during extremely intense storms.

**Water Monitoring Plan:** Groundwater will be monitored for 8 consecutive months prior to the commencement of operation and semi-annually thereafter. Two current groundwater monitoring wells have been located immediately down gradient (south) of the proposed heap leach pad and processing ponds area.

### Ecology

**Vegetation Type(s); Dominant Species:** Big sagebrush, rabbitbrush, squirreltail grass, indian ricegrass

**Percent Surrounding Vegetative Cover:** 21%

**Wildlife Concerns:** Only concern are the antelope. Centurion intends to construct a six foot high chain link fence around the heap leach pad and processing plant area. In addition, a water trough will be placed and maintained outside the fenced area.



ATTACHMENT "A"

Centurion Mines Corporation  
Operator

OK Mine  
Mine Name

M/001/039  
Permit Number

Beaver County, Utah

**The legal description of lands to be disturbed is:**

**Phase I:** NE1/4 and SE1/4 of the NW1/4; the NW1/4 and SW1/4 of the NE1/4 of Section 7; the SE1/4 and the NE1/4 of the SW1/4; the NW1/4 and the SW1/4 of the SE1/4 of Section 6, T27S, R11W, SLB&M, Beaver County, Utah

**Phase II:** NW1/4 and SW1/4 of the SE1/4 of Section 6; the NW1/4 of the NE1/4 of Section 7, T27S, R11W, SLB&M, Beaver County, Utah

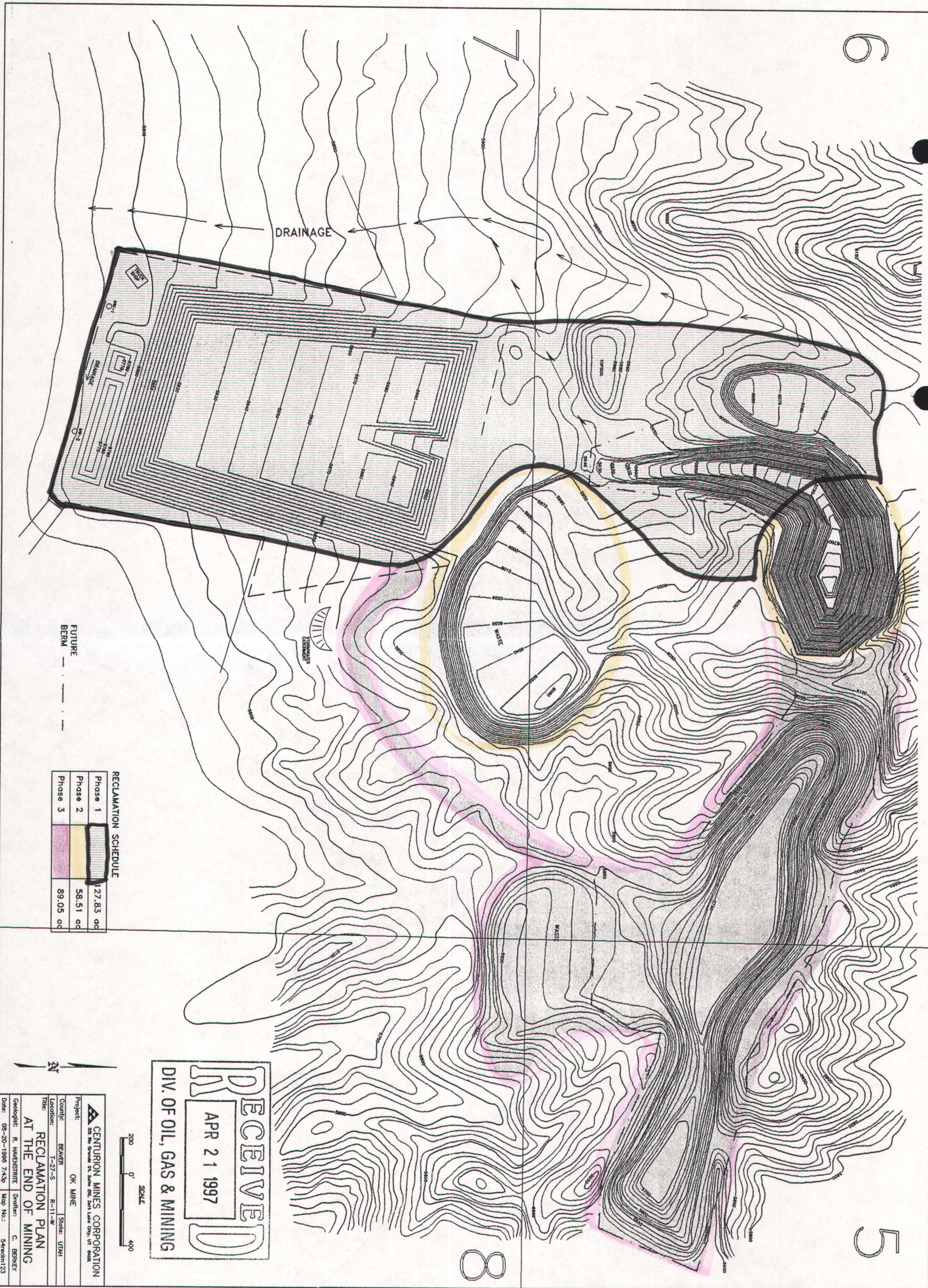
**Phase III:** NE1/4 and SE1/4 of the SE1/4 of Section 6; the NW1/4 and SW1/4 of the SW1/4; the SE1/4 of the SW1/4 of Section 5; the NW1/4 of the NW1/4 of Section 8; the NW1/4 and NE1/4 of the NE1/4 of Section 7, T27S, R11W, SLB&M, Beaver County, Utah



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8



DRAINAGE

FUTURE  
BERM

RECLAMATION SCHEDULE

|         |          |
|---------|----------|
| Phase 1 | 27.83 ac |
| Phase 2 | 58.51 ac |
| Phase 3 | 89.05 ac |

RECEIVED  
APR 21 1997  
DIV. OF OIL, GAS & MINING



|  |                     |
|--|---------------------|
| CENTURION MINES CORPORATION                  |                     |
| 351 W. 2000 S. Salt Lake City, UT 84119      |                     |
| Project:                                     | OK MINE             |
| County:                                      | BEAVER              |
| Location:                                    | T-27-S R-11-W       |
| State: UTAH                                  |                     |
| Title: RECLAMATION PLAN AT THE END OF MINING |                     |
| Geologist: R. HAVENSTRITE                    | Draftsman: C. BERRY |
| Date: 08-20-1990 7:43p                       | Map No.: Sheet 123  |



